## REMARKS

Reconsideration and withdrawal of the rejections set forth in the Office Action dated November 25, 2009, is respectfully requested in view of this amendment. By this amendment, the specification and claim 1 have been amended, and claim 12 is newly presented. Claims 1-5, 7-10 and 12 are pending in this application.

The amendments to the specification include rewriting "inserted" to read "inlaid" to more closely conform to the original German specification meaning (*see* German specification page 5, line 22 term "eingelegt"), rewriting "1-5" to "at least one to five" to more closely conform to the original German specification meaning (*see* German specification page 6, line 1 "mindestens 1-5"), and rewriting "GMB" to read "GMT," to be consistent with the acronym used elsewhere in the specification (*see* for example, English translation specification page 3, line 32 and page 6, line 31). Claim 1 has been amended to delete the description of each of the plurality of the folding pockets as having a random deformation in comparison to other folding pockets. Newly presented claim 12 recites the claimed subject matter in *process* claim form. Support is found throughout the original application (specification, claims and figures) as filed, *inter alia*, in the paragraphs beginning on page 3, line 29; page 6, line 7; and page 6, line 29, of the original (English translation) specification as filed.

The specification and claims have been amended to correct translational and typographical errors and otherwise conform the specification, claims and claim terminology to U.S. patent practice and to be consistent with the remainder of the specification and claims. Applicants, by amending any claims and/or canceling any claims, make no admission as to the

validity of any rejection made by the Examiner against any of these claims. Applicants reserve the right to reassert any of the claims canceled or the original claim scope of any claim amended, in a continuing application. It is respectfully submitted that the above amendments introduce no new matter within the meaning of 35 U.S.C. §132.

In the outstanding Office Action, the Examiner objected to the disclosure due to informalities; claims 1-5 and 7-10 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Claims 1-5 and 8-10 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Publication No. 2001/0010865 to Ragland et al. (hereinafter referred to as "Ragland et al.") in view of U.S. Patent No. 5,656,353 to Butler (hereinafter referred to as "Butler") "as evidenced in [AZDEL, Inc.] of AZMET product descriptions" (*see* Office Action page 4, item 9, hereinafter referred to as "AZDEL, Inc."); and claim 7 was rejected under 35 U.S.C. §103(a) as being unpatentable over Ragland et al. in view of Butler "as evidenced in [AZDEL, Inc.]" and in further view of U.S. Patent No. 5,883,172 to Heucher et al. (hereinafter referred to as "Heucher et al."). These rejections, as applied to the revised claims, are respectfully traversed.

**Rejections Under 35 U.S.C. §112, First Paragraph**

The Examiner rejected claims 1-5 and 7-10 under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement Specifically, the Examiner asserted that the claim 1 (Examiner underlined) features "having a random deformation in comparison to any other of each of the plurality of the folding pockets" were unsupported by the original

specification. *See* Office Action page 3, item 6.

**Response**

As discussed above, claim 1 has been amended to delete the rejected recitation; accordingly, the rejection thereto is obviated. It is therefore requested that the rejection under 35 U.S.C. §112, first paragraph be removed.

**Rejections Under 35 U.S.C. §103**

The Examiner rejected claims 1-5 and 8-10 under 35 U.S.C. §103(a) as being unpatentable over Ragland et al. in view of Butler as evidenced in AZEL, Inc.; and rejected claim 7 under 35 U.S.C. §103(a) as being unpatentable over Ragland et al. in view of Butler "as evidenced in [AZDEL, Inc.]" and in further view of Heucher et al.

**Response**

These rejections, as applied to the amended claims, are respectfully traversed. To establish a *prima facie* case of obviousness, the Examiner must establish: (1) some suggestion or motivation to modify the references exists; (2) a reasonable expectation of success; and (3) the prior art references teach or suggest all of the claim limitations. *Amgen, Inc. v. Chugai Pharm. Co.*, 18 USPQ2d 1016, 1023 (Fed. Cir. 1991); *In re Fine,* 5 USPQ2d 1596, 1598 (Fed. Cir. 1988); *In re Wilson*, 165 USPQ 494, 496 (CCPA 1970). A *prima facie* case of obviousness must also include a showing of the reasons why it would be obvious to modify the references to produce the present invention. *See Dystar Textilfarben GMBH v, C. H. Patrick*, 464 F.3d 1356

(Fed. Cir. 2006). The Examiner bears the initial burden to provide some convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings. *Id.* at 1366.

To show obviousness under §103, it is necessary to show an incentive to benefit from the change. *KSR International Co. v. Teleflex Inc. et al.*, 127 S.Ct. 1727, 82 USPQ2d 1385 (2007).

> "The proper question to have asked was whether a pedal designer of ordinary skill, facing the wide range of needs created by developments in the field of endeavor, would have seen a benefit to upgrading Asano with a sensor. In automotive design, as in many other fields, the interaction of multiple components means that changing one component often requires the others to be modified as well." (*id* at 127 S.Ct. 1744)

A demonstration of obviousness under §103 requires that the combination represent a design step well within the grasp of a person of ordinary skill in the relevant art. *id.*

> "KSR provided convincing evidence that mounting a modular sensor on a fixed pivot point of the Asano pedal was a design step well within the grasp of a person of ordinary skill in the relevant art. (*id* at 127 S.Ct. 1746)

Overview

The present claims, as amended, describe a foil structure in which the foil forms folding pockets, which are compressed, which are embedded in the carrier layer such that a mechanical anchoring is obtained between said folding pockets and the carrier layer, each of the plurality of the folding pockets having random deformations. With reference to Applicants' Fig. 2, the folds are caused to have deformations to form a compressed, crushed or randomly folded structure of the *unperforated metallic foil*. The deformations cause the structure resulting from application of

the synthetic material to incorporate the deformations.

In this regard, claim 1 recites a [h]eat-protected thermoplastic component having a carrier layer made of a thermoplastic synthetic and *an unperforated metallic foil connected to said carrier layer*,

> wherein said unperforated metallic foil comprises a plurality of ***folding pockets, which are partially compressed, turned-over or folded and therefore form unperforated folding pockets***, *which are embedded in the carrier layer such that a mechanical anchoring is obtained between said folding pockets and the carrier layer, each of the plurality of the folding pockets having a random deformation*

(emphases added).

Ragland et al. describes that "[a] flexible multilayer metal structure includes using multiple layers interlocked to form folds holding the layers together. These folds can extend into non-edge portions of the multilayer structure so that the multilayer structure defines air gaps that aid in producing a heat-shielding effect." *See* Ragland et al. Abstract.

Butler describes that "[a]n automotive vehicle heat is formed from a laminated sheet material having a thin reflective metallic layer laminated to a structural plastic layer. Mounting brackets are riveted to the laminated sheet material to mount the heat shield between a heat sensitive vehicle component and a heat source. The reflective metallic layer is perforated forming a plurality of prongs which are embedded into the plastic layer through a compression molding process to bond the two layers together forming the laminated sheet material." *See* Butler Abstract.

AZDEL Inc. describes that "AZMET CM20350... is a PBT (Polybutylene Terephthalate) plastic material with filler: Long Glass Fiber, 35%." *See* AZDEL Inc. partial data sheet, heading.

Heucher et al. describes that "[a] composition of matter useful as a hotmelt adhesive is provided. The composition is comprised of a polyamide based on dimerized fatty acid and having an amine value higher by at least two units than the acid value of said polyamide and a filler comprised of a carbonate. The filler is preferably comprised of fine particles of calcium carbonate. The adhesive is particularly useful for bonding metals, e.g. to plastics and the bonding of cables with multilayer sheaths, e.g. in optical cables and power cables." *See* Heucher et al.

Rejection of claims 1-5 and 8-10

Applicant respectfully submits that the Examiner has very freely read the features of the claimed subject matter, *as could only be done with improper hindsight*, from Ragland et al. For example, the Examiner has asserted that the three corrugated perforated metal layers of Ragland et al. would teach the claimed "plurality of *folding pockets*" *in one foil layer*, and with "said corrugations having a nonuniform and irregular shape," the corrugations are random – as in the form of the recited "*each of the plurality of the folding pockets having a random deformation*" (emphases added).

Applicant additionally notes that although Ragland et al. mentions the use of non-metal layers in between its multilayer product, these are just additional layers and do not change the basic principle of Ragland et al. Therefore, the Examiner's implicit statement that the use of thermoplastic synthetic material in an one step process is disclosed because Ragland et al.

discloses a film material ignores that the claimed compression molding technology if applied to Ragland et al., would squeeze the product of Ragland et al. together and thereby ruin the Ragland et al. desired effect of *"air gaps that aid in producing a heat-shielding effect."* *See* Ragland et al. Abstract. Thus, modification of Ragland et al. as suggested by the Examiner would *impermissibly* alter the basic principle of Ragland et al. In contrast, as defined by Webster's Dictionary, "laminates" are composites of layers of material *firmly* connected to each other for instance by using adhesive.

Ragland et al. describes a flexible multilayer foil shield/insulator used in cars as heat shields. This type of heat shield differs considerably from that claimed or described in Butler. In contrast, the heat shield claimed and the one described in Butler are both rigid structures, due to the use of a thermoplastic synthetic material and the compression molding process. Such heat shields are used in areas where there is a need for a light product that radiates heat, and is simultaneously self-supporting. In contrast, multilayer foil insulators, as in Ragland et al., are used mainly in areas where there is a need for a heat shield that is flexible enough to be formed around curved areas along the power train, i.e. the exhaust line. Thus, the motivating technologies behind the two types of heat shields are totally different. For example, a person having ordinary skill in the art producing the multilayer foil insulator will be mainly interested in metal working skills and similar background, while a person producing the instantly claimed heat shield will be mainly interested in the use of LFT, compression molding and the use of thermoplastic synthetic materials. These are two completely different fields of competence.

Further, Applicants respectfully submit that the problem a person having ordinary skill in the art of multilayer foil shields, as in Ragland et al., is confronted with is different from those which the instant subject matter resolves. While the main problem for the multilayer foil shield of Ragland et al. is *how to maintain enough air in between the layers* to optimize the heat shielding effect, the main concern addressed by the claimed subject matter is *how to obtain and maintain a proper laminate*. In further marked contrast, the claimed subject matter does not contain air layers and also does not depend on air in the product for its performance. Lastly, multilayer metal foil shields are not considered to be laminates by persons having ordinary skill in the art.

For all of the reasons discussed above, a person having ordinary skill in the art would not consider Ragland et al. to teach the claimed process (combining a metal foil and a thermoplastic synthetic material in a one-step process), at least because any teachings of Ragland et al. cannot address even the basic tenets of the instant technology. Applicants respectfully submit that for at least these reasons, Ragland et al. cannot be used as a basis to teach the claimed subject matter.

Even assuming *arguendo* that such a basis is used, Ragland et al. in view of Butler as asserted by the Examiner, Applicants respectfully submit that such a combination would be even harder without impermissible hindsight and/or ignoring the fundamental differences between the technologies discussed above.

Butler describes the use of perforations in the form of a plurality of prongs, which are embedded into the plastic layer through a compression molding process to laminate the two layers together. Applicants respectfully remind the Examiner that as discussed in the instant

specification, in reference to WO99/44851 describing a similar process to Butler, the use of perforated foils, whereby the perforation forms protrusions, backflow-filled by theremoplastic synthetic material, to form a mechanical locking engagement ("clawing" or "bracketing") during the manufacturing process is known in the art. However, Applicants also discuss in the instant specification the disadvantage of having perforations in the foil, e.g. the material directly underneath the perforations is not protected enough and an increased overall aging process of the part will take place.

The use of an unperforated foil would eliminate these weak spots known in the art (and accordingly present in Butler) and increase the life span of the produced part. However, as discussed in the instant specification, the only known way to combine an unperforated metal foil with a thermoplastic synthetic material is to pre-form the thermoplastic material – LFT or GMT – and afterwards to stick the foil to the part, for instance using a hot melt adhesive. These adhesives, however, are problematic in that even in a foil-protected environment, the adhesives age quickly under influence of heat.

Applicants respectfully submit that neither Butler, nor WO99/44851 teach, show or suggest how to combine a metal foil and a thermoplastic synthetic in a one step process. Indeed, in contrast to the claimed subject matter reciting to "an *unperforated metallic foil* connected to said carrier layer... and... ***unperforated folding pockets***, which are embedded in the carrier layer" (emphases added), both Butler and WO99/44851 teach that it is mandatory to perforate. *See* at least Butler col. 1, lines 50-53. Without using such perforations in Butler, the source for

anchoring points between the foil and the synthetic material would be absent and proper lamination could not be obtained.

Applicant respectfully submits that the citation of AZDEL Inc. is merely to provide an example of a thermoplastic synthetic material and therefore has no impact on the *structural* or *mechanical* features and interrelationships discussed above. Accordingly, AZDEL Inc. is incapable of curing the deficiencies of Ragland et al. and Butler in failing to teach, show or suggest the claimed subject matter.

Ragland et al. fails to disclose, teach or suggest particular claimed features relevant to the components used to construct "unperforated metallic foil... [comprising] a plurality of ***folding pockets, which are partially compressed, turned-over or folded and therefore form unperforated folding pockets***, *which are embedded in the carrier layer such that a mechanical anchoring is obtained between said folding pockets and the carrier layer, each of the plurality of the folding pockets having a random deformation*" (emphases added).

Accordingly, it is respectfully submitted that the remaining references are similarly deficient and fail to suggest incorporating these features and therefore also fail to suggest Applicants' claimed structure. Instead, the rejections under 35 U.S.C. §103(a) allege that it would have been obvious to use materials from multiple and varied references to produce Applicants' structure, but without describing or teaching (even the basics or key aspects of) Applicants' structure in the first place.

Thus, none of the cited references, whether taken alone or in combination, describes a [h]eat-protected thermoplastic component having a carrier layer made of a thermoplastic synthetic and *an unperforated metallic foil connected to said carrier layer*,

> wherein said unperforated metallic foil comprises a plurality of ***folding pockets, which are partially compressed, turned-over or folded and therefore form unperforated folding pockets***, *which are embedded in the carrier layer such that a mechanical anchoring is obtained between said folding pockets and the carrier layer, each of the plurality of the folding pockets having a random deformation*

(emphases added).Thus, the prior art references fail to teach or suggest all of the claim limitations, as required by *In re Wilson*, inasmuch the prior art references fail to teach or suggest at least "a plurality of folding pockets, which are partially compressed, turned-over or folded and therefore form unperforated folding pockets, which are embedded in the carrier layer such that a mechanical anchoring is obtained between said folding pockets and the carrier layer, each of the folding pockets having a random deformation," as presently claimed.

Claims 2-5, (7) and 8- 11 depend or indirectly from claim 1. Hence, claims 2-5, (7) and 8-11 are allowable at least because they depend from allowable claim 1. Applicants respectfully submit that the dependent claims contain further patentable features therein.

Rejection of claim 7

Heucher was cited by the Examiner to teach a polyamide hotmelt adhesive useful for bonding metals (aluminum-containing metals) to plastic. However, Heucher fails to cure the deficiencies of Ragland et al., Butler and ADZEL Inc. noted above with regard to claim 1. Heucher was cited by the Examiner in an attempt to teach the additional features of dependent

claim 7. Even if a person having ordinary skill in the art happens to combine Ragland et al., Butler, ADZEL Inc. and Heucher, the combined references still do not teach at least "a plurality of folding pockets, which are partially compressed, turned-over or folded and therefore form unperforated folding pockets, which are embedded in the carrier layer such that a mechanical anchoring is obtained between said folding pockets and the carrier layer, each of the folding pockets having a random deformation," as recited in claim 1. Hence, claim 7 is allowable at least because they depend from allowable claim 1.

Applicants therefore respectfully submit that the rejections under 35 U.S.C. §103(a) should be withdrawn and request an early indication of allowability.

**Newly presented claim 12**

As discussed above, newly presented claim 12 recites features discussed above as patentable subject matter in *process* claim form. Accordingly, Applicants respectfully submit that claim 12 is similarly patentable, and request early indication of allowability.

## CONCLUSION

In light of the foregoing, Applicants submit that the application is in condition for allowance. If the Examiner believes the application is not in condition for allowance, Applicants respectfully request that the Examiner call the undersigned.

Respectfully submitted,

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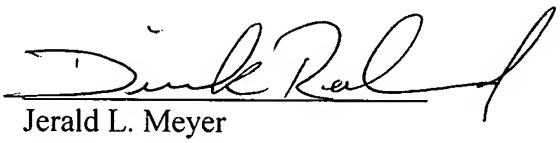

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